

Exhibit 16

Statement of Policy

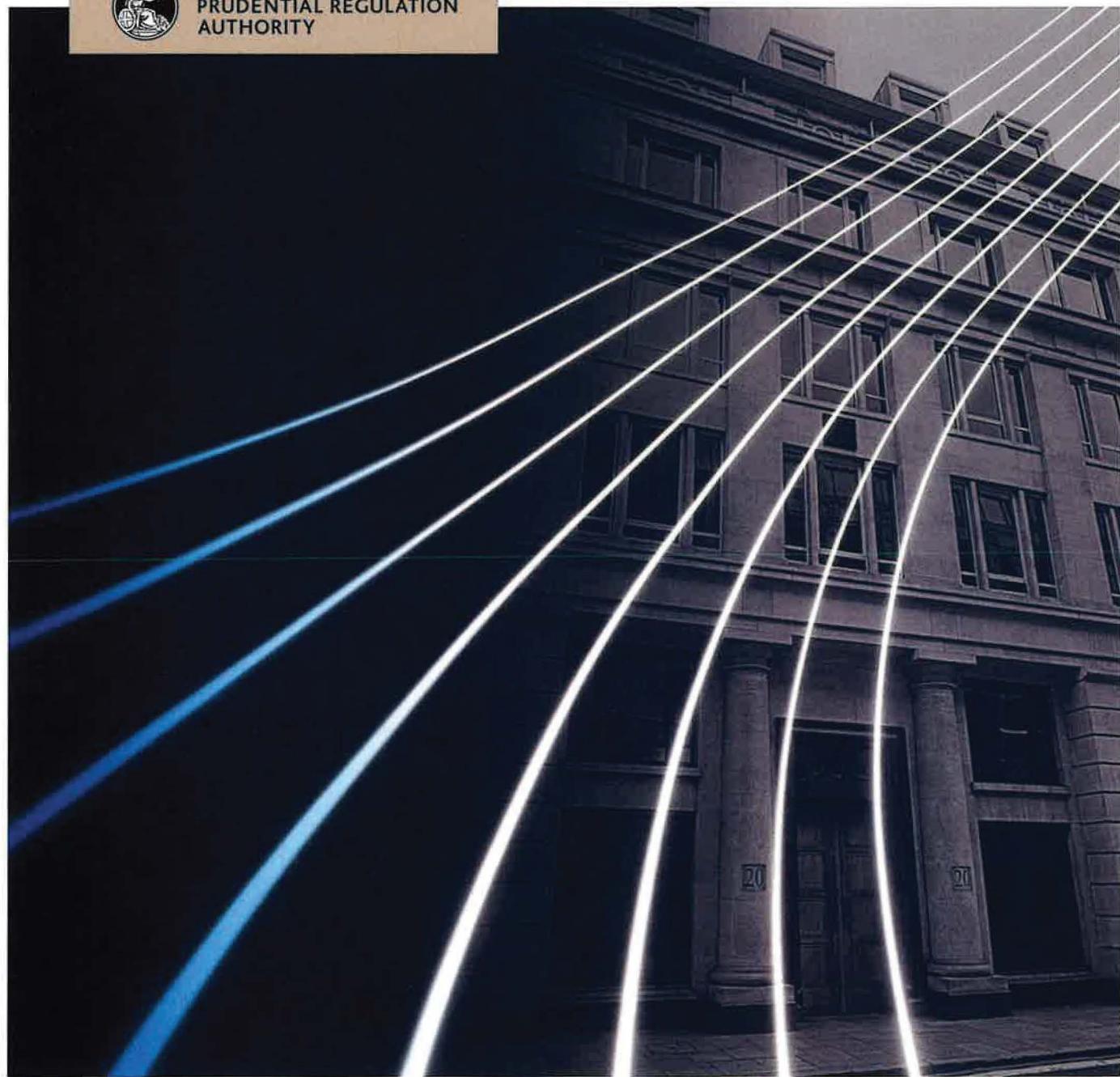
Pillar 2 liquidity

June 2019

Updating February 2018



BANK OF ENGLAND
PRUDENTIAL REGULATION
AUTHORITY





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1 Introduction

1.1 This statement of policy (SoP) is relevant to all UK banks, building societies and PRA-designated investment firms, referred to collectively as 'firms'.

- Chapter 2 details the PRA's approach to the level of application of Pillar 2 liquidity guidance.
- Chapter 3 details the PRA's approach to assessing cashflow mismatch risk.
- Chapter 4 details the PRA's approach to assessing franchise viability risks.
- Chapter 5 details the PRA's approach to assessing intraday liquidity risks.
- Chapter 6 details the PRA's approach to assessing other Pillar 2 liquidity risks.

1.1 The Pillar 2 framework covers risks not captured, or not fully captured, in Pillar 1.

1.2 In publishing its approach to Pillar 2 liquidity ('Pillar 2'), the PRA seeks to help firms understand how it assesses liquidity risks, thereby encouraging them to develop better approaches to reduce or manage these risks.

1.3 The PRA reminds firms that, in line with the Overall Liquidity Adequacy Rule, it is incumbent on them to undertake their own assessment of liquidity risks, including Pillar 2 risks, and to take appropriate measures to reduce or manage these risks. The PRA expects firms to continue to assess their risks as they consider most appropriate. The PRA does not expect firms to simply adopt the PRA's methodologies.

1.4 The supervisor's overall judgement about how the firm approaches its liquidity risk management will influence the supervisor's decision on how conservative or specific to be in providing individual guidance to firms.

1.5 The Pillar 2 approach applies in a way that is proportionate to each firm's business model and to the risk that the firm poses to the PRA's objectives. In particular, if a supervisor judges the firm's Pillar 2 risks to be relatively immaterial compared to its Pillar 1 risks, the supervisor may choose not to apply Pillar 2 guidance. If, having reviewed the firm's Individual Liquidity Adequacy Assessment Process (ILAAP) document, a supervisor judges that the risks to the PRA's objectives from a particular firm are immaterial, the supervisor can also choose not to review the firm for Pillar 2 risks. A supervisor's assessment will involve consideration as to whether any Pillar 2 measures would have a disproportionate impact on a particular type of firm, including whether it results in a relatively greater burden on smaller firms.

1.6 If appropriate, supervisors may impose other guidance for risks not previously identified in Pillar 1 or Pillar 2.

2 Level of application of Pillar 2 guidance

2.1 Pillar 2 guidance applies at individual and consolidated levels. In general, the level of application for setting guidance for a firm under Pillar 2 will be aligned to Pillar 1. Pillar 2 consolidated guidance will be calculated based on the sum of individual guidance, plus any additional Pillar 2 risk identified as arising at the level of the consolidated group. The PRA may consider some netting of solo Pillar 2 guidance to a limited extent, where appropriate.

3 Cashflow mismatch risk

3.1 This chapter provides a definition of cashflow mismatch risk (CFMR) and then outlines the PRA's approach to assessing and calibrating the risk under Pillar 2.

Definition of CFMR

3.2 CFMR is the risk that a firm has insufficient liquidity from high quality liquid assets (HQLA) and other liquidity inflows to cover liquidity outflows on a daily basis.

3.3 The Liquidity Coverage Requirement (LCR) is a measure of a firm's cumulative liquidity position at the end of a 30 day period. It does not assess whether, if a firm experiences a significant outflow on a given day of the LCR stress, the firm has sufficient inflows and cash, to cover the outflow on that day.

3.4 It is therefore possible that a firm meets its LCR, yet is not able to survive the stress scenario captured in the LCR itself: a firm's net cumulative outflow position in stress may exceed available liquidity before the 30 day mark.

3.5 The PRA's CFMR framework focuses on the following sources of risk:

- (a) 'Low point risk': Under the LCR firms need to hold sufficient HQLA to cover their cumulative liquidity needs over 30 calendar days. If a firm experiences a peak liquidity need within the 30 day window that is greater than its requirement on day 30, the firm is exposed to the additional net outflow (the difference between the peak and end-month requirement). But it does not necessarily hold sufficient HQLA to cover these additional outflows on that day.
- (b) HQLA monetisation risks: Firms may not be able to monetise sufficient non-cash HQLA to cover cumulative net outflows under the LCR stress on a daily basis. There are likely limitations to the speed and scale with which cash can be raised in the repo market or through outright sales, linked to market depth, the number of a firm's regular counterparties, the firm's individual turnover and incremental market access in stress, the need to rollover short-term repo transactions and settlement times etc. Firms should also consider the extent to which their ability to monetise HQLA through outright sale could be adversely affected by the accounting classification, in particular where sale of the asset would crystallise a loss that arises because of the difference between the fair value at the point of sale and the carry value in the firm's accounts.
- (c) 'Cliff risk': The LCR focuses on a 30 calendar day horizon. Firms may 'window-dress' their LCRs by pushing maturity mismatches just beyond the 30 day horizon.
- (d) Foreign Exchange (FX) mismatch risks: Firms typically assume that currencies are fungible given the depth of liquidity in the spot FX and FX swap markets, particularly in reserve currencies. However, firms may not be able to access FX markets as normal in times of stress.

CFMR stress scenarios and tools

3.6 CFMR can be assessed under different stress scenarios and monitored over a range of horizons. The PRA's CFMR framework is composed of a set of stress scenarios and tools of different severity and duration. These scenarios represent distinct lenses through which the PRA assesses if firms are running excessive maturity mismatches or have not adequately considered limits to monetisation. The ultimate goal of the framework is to:

- (a) ensure that, throughout the LCR stress, firms have sufficient liquidity to cover their liquidity needs on a daily basis; and
- (b) enable the PRA to monitor, with daily granularity, liquidity mismatches which will occur during longer lasting and more severe stress events.

3.7 The stress scenarios and tools described below are those which the PRA tests on an ongoing basis for all firms. The PRA systematically sets guidance on a consolidated currency basis using the granular LCR stress scenario. Tables 1 and 2 at the end of this chapter detail, for each stress scenario or tool, whether the PRA will systematically set guidance or monitor the consolidated currency and/or single currency level, and whether the monetisation profile is applied. This does not preclude the use of these or other stress scenarios or tools to set guidance, for example, in temporary and targeted ways based on tests of firms' resilience to specific, foreseeable, future stress events.

LCR and benchmark stresses

A. Granular LCR stress scenario (30 day horizon)

3.8 To assess 'low-point' risk under the stress scenario embedded in the LCR, the PRA computes firms' liquidity inflows and outflows throughout the LCR stress scenario, with daily granularity. The LCR makes behavioural assumptions about the percentage of funding that will be lost (eg retail deposits, repos) during a forward 30 day period. On the asset side, the LCR focuses on projected inflows over the same 30 day period and assigns rates according to how likely the creditor is to demand an extension of funding (eg unsecured lending to non-financials) or for the asset to roll-over (eg reverse repos).

3.9 To obtain projected daily liquidity flows under the LCR stress, the PRA applies the prescribed LCR inflow or outflow rate to:

- (a) contractual cash flows that reach maturity during a forward 30 day horizon; and
- (b) claims and obligations without a contractual end date but which may be called during the same horizon.

3.10 The PRA prescribes assumptions about the intra-month distribution of the latter.

3.11 In respect of claims and obligations without a contractual end date, the PRA assumes that:

- (c) The LCR-prescribed liquidity inflows and outflows from wholesale transactions and retail funding occur on day one of stress.
- (d) Liquidity outflows from off-balance sheet transactions without a defined maturity date occur either on day one of the granular LCR stress (eg outflows corresponding to collateral needs from derivatives transactions) or are uniformly distributed across the 30-days horizon (eg mortgage loans that have been agreed but not yet drawn down).

3.12 Available liquidity from HQLA is used to complete the calculation of net liquidity profiles under the granular LCR stress. The available liquidity will be calculated with LCR haircuts applied and after applying the criteria as specified in Article 17 of Regulation (EU) No 2015/61. Through the granular LCR stress therefore the PRA covers 'low-point' risk.

B. Benchmark retail only and wholesale only stress scenarios (90 day horizon)

3.13 The PRA will also monitor a 90 day horizon. To have visibility over cliff risks under a severe yet plausible stress, the PRA extends the respective LCR inflow and outflow rates to contractual flows scheduled between days 31-90 (months two and three of stress).

3.14 The benchmark retail only stress applies the LCR stress inflow and outflow rates to retail claims and obligations contractually maturing within days 1 to 90. Liquidity flows from claims and obligations without a contractual end date should be assumed to materialise only once, as per LCR stress, within days 1 to 30 of the stress period; the timing of these liquidity flows should follow the assumptions described in paragraph 3.11.

3.15 The benchmark wholesale only stress applies the LCR stress inflow and outflow rates to wholesale claims and obligations contractually maturing within days 1 to 90. Liquidity flows from claims and obligations without a contractual end date should be assumed to materialise only once, as per LCR stress, within days 1 to 30 of the stress period; the timing of these liquidity flows should follow the assumptions described in paragraph 3.11.

3.16 The benchmark retail only and wholesale only stress scenarios are considered both separately and jointly, as a combined benchmark stress scenario. The available liquidity derived from the firm's HQLA as described in paragraph 3.12 within days 1 to 90 will be used to complete the calculation of net liquidity profiles under the benchmark stress scenarios.¹

C. Granular LCR stress scenario (30 day horizon) and benchmark retail only, wholesale only and combined stress scenarios (90 day horizon) with monetisation profile

3.17 The PRA will monitor HQLA monetisation risks related to the granular LCR stress scenario and the Benchmark retail only, wholesale only and combined stress scenarios.

3.18 The granular LCR stress scenario (30-day horizon) with monetisation profile applies LCR stress inflow and outflow rates as prescribed in paragraphs 3.8 to 3.11. Instead of computing available liquidity as prescribed in para 3.12, daily available liquidity from cash, central bank reserves and monetising non-cash HQLA are used to complete the calculation of net liquidity profiles under the granular LCR stress scenario with monetisation profile. Where firms have stress outflows that can be met by posting of securities rather than requiring monetisation of non-cash HQLA, this will be included in the assessment of daily available liquidity. See 'Approach to modelling the monetisation of high quality liquid assets (HQLA)' section in paragraphs 3.24 and 3.25 for more information. Through the granular LCR stress with monetisation profile therefore, the PRA will be able to monitor both 'low-point' and HQLA monetisation risks.

3.19 The benchmark retail only and wholesale only stress scenarios are considered both separately and jointly, as a combined benchmark scenario, with monetisation profile. Instead of computing available liquidity as prescribed in para 3.12 the daily available liquidity derived from the firm's monetisation of non-cash HQLA will be used to complete the calculation of net liquidity profiles under the benchmark stress scenarios with monetisation profile.

Enhanced stress tools

3.20 The PRA uses two additional stress tools, as sensitivity checks, to monitor firms' resilience to very severe stress events.

¹ The first 30 days of the combined benchmark scenario is equivalent to the granular LCR stress scenario.

D. Combined benchmark with an enhanced retail stress (90 day horizon)

3.21 The PRA assesses firms' vulnerability to an acute retail run by amplifying outflow rates on uninsured deposits to levels informed by certain severe stress episodes observed during the financial crisis.

E. Enhanced wholesale only stress (90 day horizon)

3.22 The PRA assesses firms' reliance on wholesale markets and their vulnerability to a market shutdown through an enhanced wholesale only stress. This assumes a partial closure of secured, and a complete closure of unsecured wholesale markets for 90 days, with claims on, and obligations to market counterparties running off at the earliest possible date (according to contractual rights) except those secured on the most liquid assets.

Foreign currency mismatches in the CFMR framework

3.23 The PRA monitors the granular LCR and combined benchmark stress scenarios, the combined benchmark stress scenarios with monetisation profile, and enhanced wholesale stress tool, on a single currency basis. In the scenarios and tools monitored at the single currency level, the PRA does not differentiate between outflow rates for domestic currencies and non-domestic currencies.

Approach to modelling the monetisation of high quality liquid assets (HQLA)

3.24 The PRA includes in its assessment, assumptions provided by firms on the limitations they are likely to face in monetising non-cash HQLA and on outflows that can be met by posting of securities. Firms will assess, at least annually, the speed with which they expect to be able to monetise different types of non-cash HQLA, on a daily basis, via repo markets and outright sales, in times of stress. Firms will not include public liquidity insurance as a monetisation channel in this assessment. This enables the PRA to monitor firms' resilience to different stresses using self-insurance alone. Firms will use their assessments to report the resulting monetisation profiles in PRA110.² The monetisation profile will not be included in the granular LCR stress scenario or benchmark stress scenarios; it will only be included in the granular LCR stress scenario with monetisation profile and the benchmark stress scenarios with monetisation profile.

3.25 These profiles will be computed and reported on a consolidated currency level as well as in each significant currency.³

Monitoring tools, metrics and limits

3.26 The PRA applies the CFMR stress assumptions to the contractual flows and 'open maturity' columns from the PRA110 report to compute daily projected inflows, outflows and net outflows under each scenario. The LCR inflow cap does not apply to the daily projected flows. The PRA incorporates reported Level 1, level 2A and Level 2B assets as reported in the counterbalancing capacity rows from PRA110 or monetisation profiles to compute daily available liquidity, and accounts for projected liquidity needs associated with remaining Pillar 2 risks (which could crystallise at the same time as other risks captured in the CFMR scenarios). The PRA then calculates the following standard monitoring metrics on a consolidated currency basis:

- a) survival days under the combined benchmark stress scenarios,⁴ the combined benchmark stress scenarios with monetisation profile,⁵ and the enhanced stress tools as the distance

² PRA110 is available at: <https://www.bankofengland.co.uk/prudential-regulation/regulatory-reporting/regulatory-reporting-banking-sector>.

³ The PRA does not expect this to create an additional burden: firms would anyway need to consider limits by each security type (eg gilts, treasuries) to design consolidated currency profiles.

(in number of days) to the future point in time when a firm's cumulative net cash outflows become larger than its available liquidity;

- b) net liquidity position (the difference between available liquidity and cumulative net outflows) on expected day of default under the combined benchmark stress scenarios, the combined benchmark stress scenarios with monetisation profile, and the enhanced stress tools; and
- c) peak cumulative net outflows and worst net liquidity position under the granular LCR stress within 30 days, under each of the benchmark stresses and enhanced stress tools within 90 days, under the granular LCR stress scenario with monetisation profile within 30 days and the combined benchmark stress scenarios with monetisation profile within 90 days.

3.27 The PRA assumes that, when computing metrics (a), (b) and (c) above, projected liquidity needs associated with Pillar 2 risks will materialise as follows:

- (a) intraday, margined derivatives and securities financing margin on day one;
- (b) prime brokerage, matched books, debt buyback, and non-margined derivatives uniformly over the business days contained within the first seven calendar days ;
- (c) Liquidity systems and controls (L-SYSC)risk uniformly over the business days contained within the first thirty calendar days;
- (d) intragroup to be advised individually to the firm if an add-on is applied.

3.28 The PRA will monitor firms' worst net liquidity position under the granular LCR stress, the granular LCR stress with monetisation profile and enhanced wholesale stress tool, on a single currency basis within a 15-calendar-day horizon. The PRA will also monitor firms' survival days under the granular LCR stress and the granular LCR stress with monetisation profile in each significant currency.

4 This is equivalent to the granular LCR stress during the first 30 days.

5 This is equivalent to the granular LCR stress with monetisation profile during the first 30 days.

Table 1: Stress scenarios⁶

Stress Scenarios	Consolidated Currency		Single Currency	
	Monitoring	Setting guidance	Monitoring	Setting guidance
Granular LCR	✓	✓	✓	
Benchmark	✓		✓	
	Retail only	✓	✓	
	Wholesale only	✓	✓	
Granular LCR with monetisation profile	✓		✓	
Benchmark with monetisation profile	✓		✓	
	Retail only	✓	✓	
	Wholesale only	✓	✓	

Table 2: Stress tools

Stress Tools	Consolidated Currency		Single Currency	
	Monitoring	Setting guidance	Monitoring	Setting guidance
Combined Benchmark with Enhanced Retail	✓			
Enhanced Wholesale Only	✓		✓	

4 Franchise viability: debt buyback, early termination of non-margined derivatives and prime brokerage and matched books

4.1 Several risks fall within the franchise viability category: this chapter focuses on three types of franchise viability risk which will be assessed under Pillar 2. The first part provides a general definition of franchise viability liquidity risk. The second part outlines the PRA's approach to assessing debt buyback risk, the risk of early termination of non-margined derivatives, and prime brokerage and matched book liquidity risks under Pillar 2.

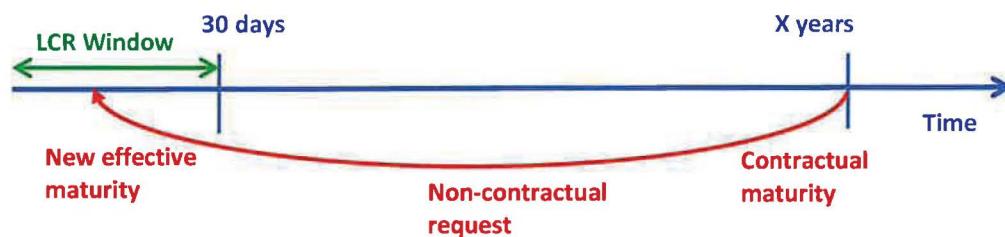
Definition of franchise viability risk

4.2 Franchise viability risk arises when a firm takes actions, despite having no legal obligation to do so, in order to preserve its reputation, and where these actions cause unforeseen liquidity outflows. Failing to take these actions may damage the firm's franchise, which could impede access to wholesale markets or cause significant outflows. The associated outflows are uncertain before the event, as there is no associated contractual obligation.

⁶ The PRA will monitor the wholesale benchmark and combined benchmark stress scenarios.

4.3 Franchise viability risk is an open-ended category. It includes risks from prime brokerage, matched books, debt buyback, early termination of non-margined derivatives and settlement failure risk. Chart 1 depicts a counterparty non-contractual request and the impact this may have on maturity.

Chart 1: Effect of a counterparty non-contractual request on maturity



Debt buyback risk

4.4 Debt buyback risk arises when firms are asked, by holders of their paper, to buy back debt immediately, transforming a longer-dated contractual maturity into a new, short-dated effective maturity, as shown in Chart 1. Firms may accept buyback requests, despite having no legal obligation to do so, for reputational reasons and to show that a functioning two-way secondary market exists for their debt. Outflows that were previously forecast to occur over the medium to long term have therefore been brought forward.

4.5 If a firm were to refuse such a request, it may signal that it was experiencing a liquidity stress. This could cause liquidity outflows and/or damage future access to capital markets. However, if a firm accepts a buyback request, it must ensure it has liquidity readily available to fulfil that request.

4.6 As early buyback of debt is not a contractual obligation, this risk is not captured in the LCR: only outflows from debt contractually maturing within 30 days are captured in the LCR.

4.7 When assessing liquidity risk arising from debt buyback risk, based on the firm's percentage of outstanding debt the supervisor may:

- consider outstanding debt with maturities beyond a 30 day horizon. This assessment will take into account the need for banks to maintain levels of debt eligible for minimum requirement for own funds and eligible liabilities (MREL) in a stress;⁷ and
- take into account activity in the secondary debt market. Firms that are market makers in their secondary debt market may experience a greater frequency of buyback requests.

4.8 The PRA's approach relies on firms' systems and processes recording instances of buybacks, including the circumstances in which they arise.

⁷ November 2016, see page 2 of: <https://www.bankofengland.co.uk/prudential-regulation/publication/2015/the-minimum-requirement-for-own-funds-and-eligible-liabilities-mrel-buffers-and-threshold>.

Risk from early termination of non-margined derivatives

4.9 Non-margined derivative transactions incur neither initial nor variation margin: changes in the mark-to-market value of the derivative are not reserved for upfront or day by day. As a result, negative mark-to-market fluctuations in value may result in unexpected liquidity outflows for a firm if the derivatives contracts were to be terminated early.⁸

4.10 A firm's derivative counterparty may, at any time, request early termination of the transaction. Such requests may occur for a number of reasons, but will likely occur when the counterparty is 'in the money' on the transaction: conversely, that means the firm is out of the money at the point of early termination, and, for non-margined trades, it will therefore incur an unexpected liquidity outflow if it accepts the request.

4.11 A firm may still accept such requests, despite having no legal obligation to do so, as rejection could suggest it does not have enough liquidity to compensate its 'in the money' counterparty. Such a perception could result in the firm being locked out of wholesale funding markets.

4.12 Payments at the contractual maturity date of the derivative are accounted for in the LCR. Liquidity risk from early termination is not included, because there is no contractual obligation to accept a request for early termination. Therefore if the contractual maturity date falls outside the LCR stress horizon, and an early termination request is accepted, the resulting outflow will not be included in the LCR. As with debt buyback risk, early terminations of non-margined derivatives result in an original maturity date contractually outside the 30 day horizon of the LCR being transformed into an effective maturity date that falls within that 30 day window (see Chart 1).

4.13 When assessing liquidity risk arising from non-margined derivatives, based on the firm's percentage of outstanding exposure, the supervisor may:

- (e) choose either peak or average exposure on a mark-to-market basis of out-of-the-money contracts;
- (f) identify a historical time period which, allows the supervisor to 'look through' unusual events regarding frequency of early termination requests; and
- (g) take into account the following factors as a guide for setting the size of the add-on:
 - (i) exposure, as a proportion of total balance sheet, to non-margined derivatives; and
 - (ii) exposure to derivatives with more volatile mark-to-market valuations. On average, greater mark-to-market volatility will cause greater liquidity outflows from early termination, for a given frequency of early terminations and a given exposure.

4.14 The PRA's approach relies on firms' systems and processes recording instances of early termination requests, including the circumstances in which they arise.

Prime brokerage and matched book liquidity risk

4.15 This section provides a definition of prime brokerage and matched book liquidity risk, and outlines the PRA's approach to assessing and calibrating the risk under Pillar 2.

⁸ While the materiality of the non-margined derivative market has declined as a result of the move to greater margining and central clearing, the PRA considers that non-margined derivatives can be a material liquidity risk for some firms.

4.16 Prime brokerage services allow investors, usually hedge funds, access to securities lending, leveraged trade executions, and cash management, among other things. Prime brokers (PB) act as intermediaries to facilitate investor positions, but do not generally assume the risk of the transactions. They do this by sourcing funding for the transactions and, where possible, the maturity of this funding will be matched to the maturity of the client transaction.

4.17 The two main liquidity risks within prime brokerage relate to franchise risk and internalisation (whereby a PB can internally net opposite positions on the same asset). Both risks, if either were to materialise, would require the firm to cover or refund customer positions. In a stress situation, firms may find accessing usual sources of funding for these positions difficult and therefore liquidity is required to cover these risks.

4.18 **Franchise risk:** PBs often offer their service to maintain a franchise value with their clients in addition to the revenues generated directly by the business activity. As such, the PB may roll over funding transactions at a customer's request even in circumstances where doing so might be detrimental to the firm's liquidity position. This could leave the PB in a position where either the customer transaction is not fully covered, and so will need to be funded further by the PB, or the maturities of the matched transactions no longer align.

4.19 **Internalisation:** If a PB has two clients that are taking opposite positions on the same asset (one long, the other short), the PB may internally net these amounts to avoid having to fund the positions elsewhere: a client short position is therefore funding a client long position. Liquidity risk arises if one client wishes to withdraw from their transaction: the PB will either need to find additional funding or will need to purchase or borrow the asset to match the remaining transaction.

4.20 Risks posed by franchise risk and internalisation are different:

- (h) Franchise risk is dependent on how likely (willing) a PB is to roll over the transaction of a client in order to protect its franchise, and the amount that is likely to be rolled over.
- (i) Internalisation risk crystallises when a customer withdraws their position, giving rise to a funding requirement for the remaining customer position, where previously the positions had matched each other.

Synthetic prime brokerage

4.21 Where synthetic structures, using derivatives, are used to mimic the effects of cash prime brokerage transactions the PRA assesses the underlying economics of the transactions and aligns the assessment with that of cash transactions. This is because synthetic structures generate similar risks to cash transactions.

4.22 The LCR in some cases captures these types of risks, including liquidity risks arising from deposits from prime brokerage customers. But for most liquidity risks within prime brokerage and matched books, the LCR either does not capture, or does not fully capture the risks posed by franchise risk and internalisation.

Methodology for assessing liquidity risks arising from prime brokerage and matched books

4.23 The PRA assesses firms on a case-by-case basis, using a supervisory approach described below, alongside firms' own assessment. The PRA keeps its approach general to allow flexibility for changing business practices. This ensures the general principles apply for all similar cases and accounts for differences in businesses.

4.24 The PRA expects, as part of its Liquidity Supervisory Review and Evaluation Process (L-SREP) that firms will undertake an assessment of their prime brokerage clients to determine the likely liquidity risks that could arise for franchise reasons, in a stress. This will inform the supervisor's judgement.

4.25 An initial add-on is calculated using the inflow rate that has been applied for secured funding transactions under the LCR. If the transactions are internally netted and conducted synthetically, the PRA will seek to assess these transactions consistently with the LCR rates. This ensures a consistent treatment of prime brokerage business across the LCR and Pillar 2.

4.26 The supervisor then applies judgement through the use of appropriate firm level information or data to adjust the initial add-on calculation. This takes into account a number of factors including the firm's governance and risk management, concentration of funding counterparties, and the firm's own franchise client assessment.

Consideration of inflow cap

4.27 Certain business models such as cash prime brokerage and matched books can lead to large gross inflows and outflows, which means the LCR inflow cap is more likely to apply. This is likely to affect firms specialising in PB activities much more than firms who undertake this as a smaller part of their overall diversified activities.

4.28 In determining any liquidity guidance issued for cash prime brokerage or matched books, the PRA takes into consideration 'capped out' inflows, and may in limited circumstances allow a firm to use capped out inflows under the LCR in lieu of a liquidity add-on. Any liquidity guidance issued will be dynamic in that, if capped out inflows are not sufficient to cover the entire guidance specified by the PRA, additional HQLA equal to the value of the difference between capped out inflows and the total add-on will be required.

5 Intraday liquidity

5.1 This chapter provides a definition of intraday liquidity risk and outlines the PRA's approach to assessing and calibrating intraday liquidity risk under Pillar 2.

5.2 The PRA defines intraday liquidity risk as 'the risk that a firm is unable to meet its daily settlement obligations, for example, as a result of timing mismatches arising from direct and indirect membership of relevant payments or securities settlements systems'.⁹

5.3 The PRA considers that all firms connected to payment or securities settlement systems, either directly or indirectly, are exposed to intraday liquidity risk.

5.4 This chapter addresses intraday liquidity risk within two main types of system: payment systems and securities settlement systems, covering both gross and net settlement. There are two ways in which a firm can connect to these systems: directly or indirectly. A 'direct participant' is directly connected to the system and is responsible to the settlement agent (or to all other participants) for the settlement of its own payments, those of its customers and those of indirect participants on whose behalf it is settling. An 'indirect participant' requires

⁹ SS24/15 'The PRA's approach to supervising liquidity and funding risks', February 2018, paragraph 2.23; <https://www.bankofengland.co.uk/prudential-regulation/publication/2015/the-pras-approach-to-supervising-liquidity-and-funding-risks-ss>.

the services of a direct participant to perform activities on its behalf (eg input of transfer orders, settlement).¹⁰

Double duty

5.5 Mitigating the risk of double duty is a primary reason for including a calibration of intraday liquidity risk in a firm's liquid asset buffer. Double duty is the use of a liquid asset buffer held for wider liquidity resilience, to also support payments and securities settlement activities intraday, where intraday liquidity risk is not included as a risk in the calibration of the liquid asset buffer.

5.6 While double duty can reduce the cost of participation in payment and securities settlement systems through lower liquid asset holdings, it carries risks. Conceptually, there is a significant risk associated with using the same assets for two separate purposes: when the assets are used for one purpose they are not available for another purpose. In practice this manifests itself in two ways:

- (j) Balance sheet resilience risk: if a firm's liquid asset buffer is serving the purpose of providing intraday liquidity then it cannot be as effective as a buffer against a run on liabilities.
- (k) Intraday liquidity risk: if a firm suffers a prolonged balance sheet liquidity stress, this uses up the firm's liquid asset buffer meaning that the bank has insufficient funds available to operate effectively in payments and securities settlement systems.¹¹

5.7 For these reasons, the PRA mitigates the risks associated with double duty by including intraday liquidity risk as a distinct risk.

Overall assessment of intraday liquidity risk

5.8 Where an add-on is applied to mitigate intraday liquidity risk, it will be determined by considering:

- (l) the firm's mean maximum net debits;
- (m) the firm's stress testing framework;
- (n) the quality of the firms' operations, process, technology and policy; and
- (o) the relevant characteristics of the firm the markets the firm operates in.

5.9 The PRA considers that the mean average of maximum net debits, combined with a stress uplift, is the most appropriate measure to assess core intraday liquidity risk, along with an evaluation of operations and controls. The remainder of this chapter explains this approach in more detail. It also details alternative methodologies for calibrating intraday liquidity risk, when the data are not available to calculate the maximum net debit.

10 Committee on Payment and Settlement Systems (2003), 'A glossary of terms used in payments and settlement systems'; http://www.bis.org/cpmi/glossary_030301.pdf.

11 For an example of the dangers associated with double duty, see Ball et al. (2010), 'Intraday liquidity: risk and regulation', Bank of England Financial Stability Paper No. 11 June 2011, Box 2; <https://www.bankofengland.co.uk/financial-stability-paper/2011/intraday-liquidity-risk-and-regulation>.

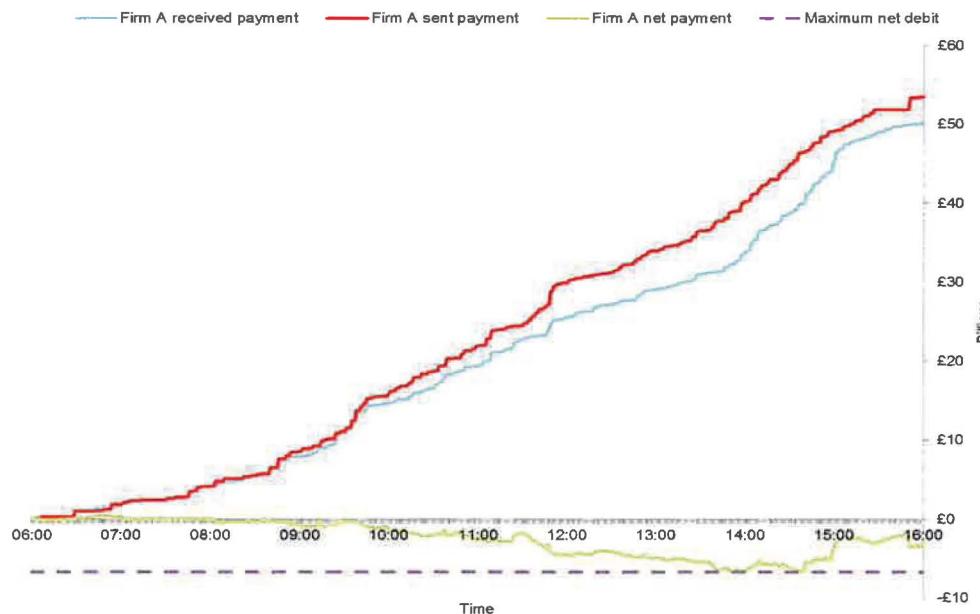
Maximum net debit

5.10 The maximum net debit is a measure of the intraday liquidity need of a firm on any given day. It is calculated as the point at which the value of payments sent by a firm most exceeds the value received by that firm, for a given payment or securities settlement system. Chart 2 shows how Firm A's payment profile and intraday liquidity needs can evolve in a single system over the course of a day.

5.11 The PRA favours the mean average maximum net debit measure, combined with a stress uplift based on relevant scenarios and an evaluation of operations and control. An alternative approach to sizing intraday liquidity risk is to consider the peak maximum net debit. But this is often driven by one-off, anticipated events, for which liquidity has been set aside, and therefore does not always provide a true reflection of a firm's intraday liquidity risk on an ongoing basis.

5.12 The mean average maximum net debit is assessed for a firm on a system by system basis. The PRA recognises that some firms may be able to create liquidity efficiencies across the systems they operate in. However, for the purposes of considering intraday liquidity risk, the PRA does not consider these efficiencies to be accurately quantifiable on a systematic basis. Nonetheless, where a firm can demonstrate these efficiencies the PRA will give them due consideration during the L-SREP assessment.

Chart 2: Example of an intraday real time gross settlement payment profile, for a single firm



5.13 A firm should not assume that a reduction in the maximum net debit profile will necessarily lead to a reduction in the PRA's assessment of intraday liquidity risk.

Alternative methodologies for sizing intraday liquidity add-ons

5.14 The methodologies used by the PRA are based on the maximum net debit position of a firm as a first best option, but where a firm is unable to calculate its maximum net debit, the PRA can employ a range of other methodologies.

5.15 An important proxy methodology is to estimate the level of liquidity recycling. Liquidity recycling is the ratio between value of payments sent and liquidity usage. For example, in a

single system on a given day, if a firm has liquidity usage of £1 million and a gross outflow of £10 million, the firm would have a liquidity recycling factor of 10.

Secured, disclosed intraday credit facilities in securities settlement systems

5.16 An alternative to the maximum net debit approach for assessing intraday liquidity risk is used when the following criteria are met:

- (p) the securities settlement venue provides a secured and disclosed intraday credit facility to the participant; and
- (q) the participant in that system secures their intraday credit line by holding a pool of assets.

5.17 When both criteria are met, the PRA will consider the size of the secured facility when assessing the intraday liquidity risk.

Assessing risks in stress

5.18 As outlined in paragraph 5.9, a stress uplift is applied to the assessment of intraday liquidity risk.

Stress scenarios

5.19 The following, based on the stress scenarios detailed in Basel Committee on Banking Supervision (BCBS) 'Monitoring tools for intraday liquidity management',¹² are ways in which an intraday stress may manifest:

- (r) a credit or liquidity shock affecting the firm directly, reducing counterparties' willingness to make payments to it in a timely fashion;
- (s) an operational, credit or liquidity shock affecting the ability of a major counterparty in the payment system to make payments to the settlement firm as expected;
- (t) a credit or liquidity shock affecting a major customer or group of customers of the settlement firm, preventing them from receiving payments as expected; and
- (u) market conditions change which mean that a given pool of assets generates less intraday liquidity.

5.20 Scenarios (a) to (c) capture the risk of a change in the payment profile of a firm which can in turn affect the maximum net debit position, while scenario (d) affects the ability of the firm to fund its intraday liquidity position. These stresses are applicable to both direct and indirect participants. For more detail on the manifestations of these stress scenarios, see BCBS Monitoring tools for intraday liquidity management.

5.21 A significant impact of stress (i) on a firm that uses correspondent banking services may be the withdrawal of intraday credit line(s) by its correspondent bank(s). This may require the firm to prefund or collateralise its intraday credit line(s).

Stress uplift

5.22 The stress uplift reference point is based on historical evidence gathered during stressed conditions of the type described above, and for both market stress and idiosyncratic stresses. Firms should develop their own stress scenarios in line with their risk appetite.

12 BCBS (2013), 'Monitoring tools for intraday liquidity management'; <http://www.bis.org/publ/bcbs248.pdf>.

5.23 The stress uplift applied will be subject to supervisory judgement. Factors taken into account will include, but are not limited to, the sophistication of the firm's intraday liquidity management systems, how the firm connects to the respective payment and securities settlement systems it uses, and the business model of the firm.

5.24 The PRA expects firms to consider the risk of haircut and collateral eligibility changes in their assessment of intraday liquidity risk.

6 Other liquidity risks

Margined derivatives

6.1 This section provides a definition of the liquidity risks arising from margined derivatives then outlines the PRA's approach to assessing and calibrating the risk under Pillar 2.

6.2 The PRA considers that liquidity risk arising from initial margin on derivatives contracts is not captured in the LCR. However, liquidity risk arising from variation margin on derivatives contracts is captured within the LCR. Therefore, the Pillar 2 assessment of liquidity risk arising from derivatives contracts will cover initial margin only.

Methodology for assessing liquidity risks arising from initial margin on derivatives contracts

Initial margin posted

6.3 During stress, counterparties may, for a number of reasons, increase a firm's initial margin requirements. This represents a contingent liquidity risk.

6.4 When calculating a firm's liquidity need arising from initial margin posted, the PRA takes into consideration the historical average of initial margin posted to counterparties, and applies a stress uplift to this figure.

Loss of initial margin as a source of funding

6.5 The loss of initial margin received due to the counterparty requesting a trade termination, novation, or segregation represents a contingent liquidity risk to the extent that collateral is no longer available to the firm to use as a source of funding. Firms generally have the contractual right to refuse these requests but may grant requests due to franchise reasons. As such, the PRA will in general treat risks arising from the loss of initial margin (IM) received as a funding source, consistently with the PRA's approach to other franchise risks.

6.6 When assessing liquidity risk arising from loss of initial margin as a source of funding, the supervisor takes into consideration historical evidence of trade termination, novation or segregation.

Securities financing margin

6.7 This section provides a definition of the liquidity risks arising from securities financing initial margin requirements (SFMR) and outlines the PRA's approach to assessing and calibrating the risk under Pillar 2.

6.8 SFMR is the risk of additional outflows relating to margin requirements on securities transactions, both over-the-counter (OTC) and centrally cleared repo transactions. The PRA will assess:

- (v) firm-related margin calls due to the perceived higher probability of default of the firm by the repo counterparty; and
- (w) collateral-related margin calls due to a fall in the price of the collateral or haircut widening due to perceived higher risk of the collateral.

6.9 When assessing the liquidity risk arising from SFMR, the PRA takes into consideration the firm's own historical average initial margin data and applies a stress uplift. The stress uplift will be informed by supervisory judgement, the firm's own assessment, peer comparison, and risk management approaches of relevant clearing houses.

Intragroup Liquidity

6.10 Intragroup liquidity risk may manifest in the following situations where:

- (a) entities within the same group are strongly interconnected and reliant on each other, there is a risk that intragroup support may become unavailable in stress; and
- (b) liquidity may not flow freely within one group or one single legal entity, between an overseas branch and headquarters because of legal, contractual, regulatory or operational limitations resulting in liquidity being trapped in business as usual circumstances or becoming trapped under stress.

6.11 The PRA addresses intragroup liquidity risk on a case-by-case basis, taking into consideration the degree of intragroup interconnectedness. This includes group entities' degree of willingness and ability to support one another in both business-as-usual and stress situations.

6.12 In respect of trapped liquidity, following LCR Article 7(2), assets which are subject to any legal, contractual, regulatory or other restriction preventing the firm from disposing of those assets cannot qualify as liquid assets. Some assets are not subject to any such restriction in business as usual circumstances but may become trapped under stress, for any contingent restriction that a third country may set. Such assets are not excluded from the LCR. Therefore, as part of the Pillar 2 assessment of intragroup liquidity risk, the PRA considers the risk of contingent trapped liquidity.

Liquidity systems and controls

6.13 This section provides a definition of L-SYSC risks and then outlines the PRA's approach to assessing and calibrating the risk under Pillar 2.

6.14 L-SYSC risks can be both quantitative and qualitative in nature. Quantitative risks typically include mismeasuring or misreporting, inappropriate assumptions or imprudent calibrations. Qualitative risks can include a lack of reportable metrics, poorly articulated risk appetites and

poor quality ILAAPs. Risks stemming from inadequate liquidity systems and controls are not currently captured under Pillar 1.

6.15 Such quantitative and qualitative issues can demonstrate poor liquidity risk management and give rise to additional liquidity risks. Where such concerns are noted, the PRA typically informs a firm of these and requests remediation. The PRA may also impose additional liquidity guidance under Pillar 2, until such time as L-SYSC risks have been addressed. This liquidity guidance is generally calibrated in the form of a scalar applied to the total of a firm's LCR net outflows and other Pillar 2 liquidity guidance.

6.16 L-SYSC risks and poor liquidity risk management are typically idiosyncratic, and supervisory analysis and judgement are crucial in assessing the level of risk posed and the appropriate mitigant. To ensure consistency, L-SYSC scalars are therefore also informed by internal peer review.

6.17 The purpose of any additional liquidity guidance stemming from L-SYSC concerns should not be confused or conflated with the existing Risk Management and Governance ('RM&G') capital scalar framework set out in the PRA's statement of policy on methodologies for setting Pillar 2 capital. As set out in that statement, a RM&G scalar is considered only when the PRA assesses a firm's overall risk management and governance to be significantly weak. As outlined, any L-SYSC scalar would only be considered to specifically reflect inadequate liquidity systems and controls.

6.18 However, there could be circumstances in which a firm has both poor overall risk management and governance, and inadequate liquidity systems and controls. In such a scenario, both a RM&G scalar and an L-SYSC scalar could be both proportionate and appropriate.

Annex: Updates to SoP 'Pillar 2 liquidity'

June 2019

Following publication of Policy Statement 13/19 'Pillar 2 liquidity: updates to the framework',¹³ this SoP was updated to provide further detail on the following, and will take effect from Monday 1 July 2019:

- how the PRA sets guidance under the CFMR framework (paragraph 3.7);
- the definition and assumptions under the benchmark stress scenarios and enhanced stress tools (paragraphs 3.13 to 3.17, 3.19, 3.21 and 3.22); and
- the metrics that the PRA will calculate under the benchmark stress scenarios and enhanced stress tools (paragraph 3.26).

The SoP has also been updated to include improvements to assist the reader, eg removing blank pages, making hyperlinks visible and having continuous footnote numbers.

¹³ June 2019: <https://www.bankofengland.co.uk/prudential-regulation/publication/2019/pillar-2-liquidity-updates-to-the-framework>.